SESSION 4 – INTERMODAL FREIGHT NETWORK SYSTEM

CHAIRS AND COORDINATORS

Robert Bouchard, Maritime Administration

Richard Walker, Maritime Administration

TITLE OF PRESENTATIONS AND SPEAKERS

"Efficient Marine-Rail Interface" by Blair Garcia, TranSystems Corporation

"Port Intermodal Distribution Network" by Bill Ellis, Port Authority of New York and New Jersey

"Inland Agile Port" by Peter Franke, Noell Crane (Germany)

"Intermodal Freight Rail" by William Goetz, CSX Lines

SUMMARY

The theme for this session was to discuss improvements to intermodal systems and networks that will provide more efficient means of cargo movement and ensure cargo security. Recent data shows that over the past three to five years a major pinch-point in the transportation system has been the port or terminal area. This is true from access or egress systems, as well as terminal operations. The session presented some innovative ideas on how to resolve the issues.

Efficient Marine-Rail Interface

The purpose for developing an efficient marine-rail interface is to improve marine terminal efficiency and intermodal terminal efficiency, and the corridors that connect these facilities. Some potential benefits of efficient marine-rail interface and a systemic approach to regional freight infrastructure include, (1) the ability to accommodate both commercial and military freight, (2) added flexibility utilizing marine and intermodal terminals, and (3) an increase in the velocity of cargo through existing transportation infrastructure. An efficient marine-rail interface is part of a larger agile port system. Agile port systems typically consist of five major components: (1) the marine terminal, (2) inland intermodal facilities, (3) freight corridors, whether they are dedicated freight corridors or existing shared use freight corridors, (4) data and information management systems, and (5) system management to tie all the pieces together. An efficient marine terminal has the capability of increasing typical throughput by as much as 100 – 200percent over existing facilities. However, to do this there needs to be an inland intermodal center to accommodate the storage, sorting and dispatching of containers from the efficient marine terminal.

Port Intermodal Distribution Network

The Port Inland Distribution Network (PIDN) focuses principally on moving containers through a port area and to the region that it serves. PIDN is a concept to move containers through the Port of New York and New Jersey (PANYNJ) and the area it serves. Today the port is served principally by truck in terms of inland distribution, with the exception of major railroads like NS and CSX. PIDN offers an alternate system for moving containers inland. Currently the PANYNJ handles about three million TEUs, with a projected 4.2 percent compound annual growth rate, which will grow to16 million TEUs in the next

40 years. Today about 86 percent of the container traffic moves through the port by truck. The idea of PIDN is to move a substantial numbers of containers inland by rail and barge, rather than by truck. It was realized that many other benefits could accrue, not just to the metropolitan area of New York but the entire larger northeast regional area. The PIDN could stimulate economic development by creation of activity at inland feeder ports where they have been de-industrialized. Also, the ability to, at feeder port locations, construct warehouses that would, in effect, be on the port. In the hub port, warehouses are being demolished to make room for container terminal capacity; yet at feeder ports, they have an opportunity to meet industry needs for warehousing on dock, and that is a significant benefit as well. And, lastly, rail and barge movement offers significant energy conservation and fuel efficiency, especially in comparison to trucks.

Inland Agile Port

On the major containerized trade routes, container shipping is growing by 6-8 percent each year. Container ports in Europe are becoming more congested and ports are trying to find a way to move more cargo via rail. Several years ago there was a government sponsored competition in Germany to develop new methods to sort intermodal rail traffic. A method to replace the existing time consuming sorting yards was being sought. A new idea was developed using shuttle cars and overhead cranes. The new facility is 80 meters wide by 700 meters long. In Europe 700 meters is the maximum length of trains. These trains arrive at the facility every eight minutes. The facility can handle up to six trains at a time. At zero time the first train arrives, after eight minutes, the second, after sixteen minutes, the third, and so on. After 40 minutes, all the trains have arrived. After 20 minutes in the facility the first train departs. Then each of the other trains leave at eight-minute intervals. Within 100 minutes all the loads can be interchanged which is about 360 containers. The system is called mega-hub and uses up to 10 overhead cranes to in parallel to sort from one train to the other. This type of system will help prevent road congestion and fits into smaller land areas than current sorting yards.

Straddle-Carrier Based X-Ray System Manufactured by Noell. This system was developed with an x-ray company called Aero-Core based in California. The U.S Customs Service uses this system at the Port of Miami where operations have been very successful. The carrier passes over the containers, one or two high, and produces a manifest of their contents -- drugs, contraband, explosives, weapons, etc. A patent also exists of an application to detect nuclear materials.

Intermodal Freight Rail

Intermodal involves the movement of trailers and containers on trains. A private sector business, the North American intermodal rail industry is primarily the province of six large Class I railroads. First, intermodal rail is a competitive business because it has no pre-ordained franchise – almost all cargo on the intermodal trains begins and ends on rubber tires (trucks). Truckers could move all the freight if rail was not competitive. Second, this is a very service-oriented business. Whoever owns the cargo is very anxious to convert it to cash. Third, the intermodal

network today is basically the same as 50 years ago. The rail network has gotten smaller as time has gone on. Finally, this is a growth business more freight can be put on rail. How is intermodal competitive advantage created? First, rail is more competitive over longer distance. Second, large train-load volume. The more containers you can put on the train, the lower the unit costs. Finally, the more concentrated the traffic distribution pattern is, the more economical and the more competitive that intermodal move will be.